

SECTION 1

THE 305(b) PROCESS

1.1 Blueprint for the Comprehensive 305(b) Guidelines

The goals for 305(b) include:

- C Comprehensive coverage** characterizing all waters in each State, Territory, Interstate Water Commission, the District of Columbia and participating Tribes. Comprehensive coverage will lead to comprehensive national coverage.
- C Reducing paperwork** while increasing the amount of assessed waters in each State, other jurisdiction and participating Tribe.
- C Annual** electronic updates of key information for all assessed waters during the previous year, starting with 1997 for pilot States ready to do so.
- C Georeferencing of 305(b) information** to identify and map specific waterbodies, including whether they meet water quality standards, and to enable long-term tracking of trends.
- C More rapid** real-time public availability of water quality information.

For 1998 and beyond, these *305(b) Guidelines* ask each State, other jurisdiction and participating Tribe to:

- C Report electronically**, preferably on an annual basis, as soon as the State can. Several States will be ready in 1997, many others by 1998.
- C Georeference** 305(b) information to show the actual locations of the waters and whether they meet water quality standards. Quite a few States now can achieve this or are in the process of doing so; all should be able to do such computerized mapping by 2002.

- C **Develop a plan** including a map showing how it will achieve comprehensive assessment coverage of its waters. This plan is not required for the 1998 reports but is highly recommended. Much of the work to develop such a plan will have already been performed through the State's Section 106 Monitoring Strategy. EPA will work with individual States, other jurisdictions and participating Tribes on a design and reporting strategy for comprehensive coverage of the waters.

Three alternative reporting formats are designed to reduce paperwork, allow more reporting flexibility and make information available to the public more quickly. Each State, Territory, Interstate Water Commission, the District of Columbia and participating Tribe may submit 305(b) information in one of three ways.

The preferred format is :

An annual electronic report, accompanied in even years by an abbreviated narrative report. The abbreviated narrative report will contain:

- only the information required by law that has **changed** from the last report, and a simple reference to that report.

The second and less preferred format is :

In even years, an electronic report accompanied by an abbreviated narrative report. The abbreviated narrative report will contain:

- only the information required by law that has **changed** from the last report, and a simple reference to that report.

The third and least preferred format is :

In even years, a full hard-copy report as in the past, including all summary tables and programmatic chapters.

Included in each of these three alternative formats is the plan for comprehensive assessment coverage described above.

These Guidelines are reformatted to show the content of the report itself in one volume, with a supplemental volume describing the best monitoring and assessment processes to produce the information for the report.

The U.S. Environmental Protection Agency's (EPA's) national 305(b) Reports to Congress, published biennially in 1998 and future years, will include:

- **All information** included in biennial Reports to Congress as in the past.
- **An added section** describing progress in achieving comprehensive assessment coverage of the waters both nationally and State-by-State. This section will be cumulative in nature and will, over time, depict trends and all water quality information submitted to date.

EPA Assistance to States, other jurisdictions, and participating Tribes to achieve the 305(b) goals will include:

- **Financial resources** to help support georeferencing of 305(b) information to Reach File 3 (RF3).
- **Technical assistance** from experts in EPA Headquarters, Regions and the EPA Office of Research and Development's Environmental Monitoring and Assessment Program (EMAP).

1.2 Background on 305(b) Reporting

The Federal Water Pollution Control Act (PL92-500, commonly known as the Clean Water Act), as last reauthorized by the Water Quality Act of 1987 (PL100-4), establishes a process for States to use to develop information on the quality of the Nation's water resources. The requirements for this process are found in Sections 106(e), 204(a), 303(d), 305(b), and 314(a) of the Clean Water Act (see Appendix A of the *Guidelines Supplement*). Each State must develop a program to monitor the quality of its surface and ground waters and prepare a report describing the status of its water quality. EPA is to compile the data from the State reports, summarize them, and transmit the summaries to Congress along with an analysis of the status of water quality nationwide. This 305(b) process is the principal means by which EPA, Congress, and the public evaluate whether U.S. waters meet water quality standards, the progress made in maintaining and restoring water quality, and the extent of remaining problems. In 1996, 56 States, Territories, Interstate Commissions, and Indian Tribes prepared 305(b) reports.

1.3 The Updated 305(b) Process

The updated 305(b) process will include comprehensive assessments of the State's waters using a combination of monitoring designs and

evaluative techniques. Beginning in 1998, the States are encouraged to include in their 305(b) reports a map and plan for achieving the goal of comprehensive assessment coverage. EPA believes that much of the work to develop such a plan will have occurred through the Section 106 Monitoring Strategy process. States are being asked to achieve comprehensive assessment coverage as soon as possible and report in 1998 and subsequent 305(b) reports their status in achieving this goal.

Contents of Abbreviated Hard-copy 305(b) Reports

- C PART I: EXECUTIVE SUMMARY/ OVERVIEW—**Provide a new and revised version for each hard-copy report.**
- C PART II: BACKGROUND (Atlas, Total Waters, Water Pollution Control Program, Cost/Benefit Assessment, Special State Concerns and Recommendations)— **Report on changes since last hard copy report*.**
- C PART III: SURFACE WATER ASSESSMENT (Monitoring Program, Assessment Methodology and Summary Data, etc.)
 - C **Include plan and status of achieving comprehensive assessments; in addition, report on changes since last hard-copy report*.**
 - C Summary tables for rivers/streams, lakes, and estuaries are optional if electronic reports of all key data are submitted electronically, which will allow EPA to calculate summaries. However, if the State is using a probability-based monitoring network, report overall network results in the hard-copy 305(b) reports (include waterbody-level data for that network in the assessment database).
 - C **Update Clean Lakes tables and wetlands section and tables if significant changes occurred since last hard-copy report*.**
- C PART IV: GROUND WATER ASSESSMENT (Overview of Ground Water Contamination Sources and Protection Programs; Summaries of Contamination Sources, Ground Water Quality, and Ground Water-Surface Water Interactions)—**Report on changes since last hard-copy report*.** Summary tables are optional if State provides them via electronic reporting.

* Where no significant changes have occurred since the last 305(b) report within any subsection of this Part, report that no changes have occurred.

EPA is updating the 305(b) process to allow States to take advantage of modern information technology to provide more current and comprehensive information on the status of the Nation's waters. **Three alternative reporting formats** are designed to reduce paperwork, allow more reporting flexibility and make information available to the public more quickly. Each State, Territory, Interstate Water Commission, the District of Columbia and participating Tribe may submit 305(b) information in one of three ways. The three formats are described in Section 1.1, Blueprint for the Comprehensive 305(b) Guidelines.

EPA will use all reports and electronic updates described above to report biennially to Congress on the status of the Nation's waters. The Report to Congress will include a new section which shows the progress made by the States, other jurisdictions, and participating Tribes toward the goal of comprehensive coverage of waters.

States that are implementing rotating basin management plans might choose to transmit electronic updates annually covering the basins, and any other waters assessed, over the previous year. The goal is to have all States participating in annual electronic reporting by the year 2000. Such States also might find it more convenient to prepare their hard-copy reports on an annual basis as well, to synchronize with their basin management plans.

Beyond the national uses of the State 305(b) reports, there are many State-specific and local uses. To meet these needs and provide comprehensive programmatic information and data, EPA encourages States selecting the first or second option to prepare a full hard-copy report periodically, including complete programmatic chapters, maps, and summary tables as described in Sections 3 through 6 of these *Guidelines*.

This new, comprehensive 305(b) cycle supports several recent Federal and State initiatives:

- reporting of C Comprehensive monitoring and assessments
 - C Rotating basin surveys and basin management
 - C Reduction of paperwork burden through the use of electronic State assessment data
 - C Water environmental indicators including the Index of Watershed Indicators (IWI)
 - C Performance Partnership Agreements (PPAs)
-

Figure 1-1 shows how some of these initiatives are related to each other, and Sections 1.4 through 1.9 describe these initiatives in more detail.

1.4 Electronic Updates

The State/EPA 305(b) Consistency Workgroup agreed on the need for periodic, electronic updates from the States on their waterbody-level assessments. Resources saved by switching to abbreviated hard-copy 305(b) reports should be put toward improved data management and

Figure 1-1 not available in electronic form

electronic reporting. EPA and the Workgroup find such updates important for two reasons:

- C EPA needs the data for biennial reports to Congress, Clean Water Act reauthorization, and other national planning activities
- C Assessments and data management should be ongoing activities, not performed in haste prior to preparation of a 305(b) report.

The bulk of a State's electronic update will consist of waterbody-level assessment data for assessments completed in previous calendar year(s).

These data files can be

EPA Waterbody System files or State-developed databases files. It is extremely important that the State files be submitted in a format that EPA can convert to standard national 305(b) codes as described in Section 6. We will work with States to help ensure database compatibility and national consistency. Annual electronic reporting should not be a large burden for most States. Nearly 40 States transmitted the same types of assessment data in electronic form during 1995-96.

EPA is offering technical support to States that need to create or upgrade assessment databases. Other components of a State's electronic update are listed in the box entitled "Contents of Annual/Biennial Electronic Updates."

In even-numbered years beginning in 1998, annual electronic updates are due April 1 with the abbreviated narrative reports. In odd-numbered years, annual electronic updates should be transmitted to EPA in April if possible, although they can be transmitted over the summer. States/Tribes with existing electronic reporting capability are encouraged

Contents of Annual/Biennial Electronic Updates

- C The State's waterbody-level assessment data files for assessments completed in previous calendar year(s). If more convenient, the State may send its updated 305(b) assessment database for the entire State, provided the assessment dates are included for each waterbody.
- C If the State is using a probability-based monitoring network, include waterbody-level data for that network in the assessment database but report overall network results in hard-copy reports.
- C A GIS coverage showing assessment results since last update or hard-copy maps showing assessment results
- C Metadata for the above files including a brief data dictionary
- C Updated ground water assessment tables in database, spreadsheet, or word processing format

to submit their 1997 updates by the end of December 1997. This update consists of (1) assessment data for State-defined watersheds or those basins or 8-digit U.S. Geological Survey (USGS) cataloging unit (CU) watersheds assessed in the previous calendar year as well as any additional waters assessed in the previous calendar year, or (2) the entire statewide database as updated.

If a State is unable to transmit an electronic update of their assessment data in a given year, the State should send a biennial electronic update by April 1 of the following year covering waters assessed in the previous two calendar years. **See Section 6 for more information on electronic reporting, a detailed list of data elements, and "data rules" for ensuring compatibility with standard national codes and formats.**

1.5 Rotating Basin Surveys/Basin Management

Approximately half of the States have implemented statewide basin management approaches that include rotating basin monitoring. Typically, such States assess one-third to one-fifth of their watersheds or basins in a single year, so that all watersheds or basins are assessed over a three to five year period. Annual electronic updates include assessment data primarily for those basins or watersheds assessed in the previous calendar year as well as assessments routinely completed in other parts of the State during the previous year(s). This should not present a problem if States keep their assessment databases up-to-date. States that have not yet done so should consider adopting a rotating-basin approach for water quality assessment and management.

A comprehensive assessment of all State waters should be accomplished as quickly as feasible. Through a rotating basin survey approach, comprehensive assessments can often be achieved over a five year cycle or less. The advantage of this approach is that it allows greater coverage of State waters than historical practices, through a combination of probabilistic monitoring techniques and the efficiencies of integrated watershed management.

1.6 Comprehensive Assessments

EPA and the States have established a long-term goal of comprehensively characterizing all surface and ground waters of each State using a variety of techniques targeted to the condition of, and goals for, the waters. These techniques may include a combination of traditional targeted monitoring and probability-based designs. To help ensure national progress toward this goal, each State is encouraged to include in its 1998

305(b) report a plan for comprehensive monitoring and assessment of its waters. Section 4 describes the contents of this plan.

Probability-based Monitoring (Sample Surveys)

No State has sufficient monitoring resources to sample all its waters. With probability-based monitoring, a State can report assessment results for the target resource as a whole (e.g., all headwater streams) not just those waters that have been monitored. These assessment results are unbiased and include confidence limits. Several States including Maryland, Delaware and Indiana are incorporating this approach. EPA can provide technical support for designing probability-based monitoring networks to supplement existing networks through its Environmental Monitoring and Assessment Program (EMAP) staff who have extensive experience designing and conducting probability-based monitoring.

In order to provide for national and regional consistency, EPA and State monitoring staff should discuss preparation of this plan, including ways to adapt their current monitoring program to achieve comprehensive monitoring.

See Section 2 and Appendix I of the *Guidelines Supplement* for more information about different monitoring designs for achieving comprehensive assessments.

1.7 Performance Partnership Agreements

More than 30 States are entering into Performance Partnership Agreements (PPAs) with EPA. PPAs give the States more flexibility to set their own programmatic priorities. In return, measuring environmental performance and reporting on certain environmental indicators are among the activities States agree to perform when entering a PPA. A Performance Partnership begins with a comprehensive assessment of a State's problems and conditions to establish a stronger basis for decision-making. Based on this information, the State proposes environmental and public health objectives and an action plan as a basis for negotiating a PPA with EPA. At this point, if not before, the State also conducts outreach efforts to ensure appropriate public understanding and support.

Next, EPA and the State begin negotiating the actual agreement. Ideally, the PPA includes specific roles for EPA and the State, including how EPA's oversight of State roles will be reduced in those areas of strong performance. In addition, it includes indicators of environmental and program management performance to better measure success.

An added element of PPAs is grants flexibility. States are given a new option of combining two or more single-media grants into a single Performance Partnership Grant. For example, a State could propose a single grant combining CWA Section 106, 104(b)(3), and 319 grants and Safe Drinking Water Act public water supply and underground injection grants. Thus, PPAs give the States and Tribes increased flexibility to set programmatic and funding priorities. PPAs also offer administrative savings and improved environmental performance monitoring through agreed-upon environmental indicators.

1.8 Water Environmental Indicators

In return for increased flexibility, States implementing PPAs agree to measure certain environmental indicators. EPA Office of Water, in conjunction with States and other public and private agencies, have developed a suite of 18 water environmental indicators to track environmental progress. These were published in June 1996 in the report *Environmental Indicators of Water Quality in the United States* (EPA 841-F-96-001). EPA intends to publish an indicators report periodically to measure progress toward national goals, milestones, and objectives. Each State and its EPA Region will work together to include the 18 indicators in the State/EPA PPA. Appendix C of the *Guidelines Supplement* includes fact sheets for these 18 water indicators and their reporting frequencies as recommended by the 305(b) Consistency Workgroup.

The 305(b) Workgroup recommended that two of the 18 indicators be reported in State 305(b) reports and annual electronic updates:

- C Individual use support for drinking water, aquatic life, recreation, and shellfish and fish consumption (in 305(b) reports and electronic updates)
- C Biological integrity (see *Guidelines Supplement*, Section 4).

Through the indicators process, EPA will be collecting and reporting on data from many national-level databases. States and Tribes already provide this information to EPA through other reporting mechanisms. Except for species-at-risk data, which come from the Nature Conservancy's aggregation of State Natural Heritage databases, the following nine indicators are from EPA-maintained databases. In preparing the national Report to Congress, EPA will draw from the information included in these databases.

1. THE 305(b) PROCESS

- C Fish and Wildlife Consumption Advisory Database
- C Contaminated sediments
- C Selected point source loadings to surface water and through Class V wells to ground water
- C Population served by community drinking water systems violating public health standards
- C Population served by community drinking water systems exceeding lead actions levels
- C Number of community systems with source water protection programs
- C Species at risk
- C Surface water pollutants
- C Population served by unfiltered surface water systems at risk from microbiological pollution (Note: this indicator is no longer being used to track national water quality)

EPA will provide to the States and Tribes at least six months preceding their 305(b) report submissions the most current output from these national databases for their review. States are requested to use these data where appropriate in their assessments.

For the following seven indicators, EPA will collect information from national data sets that are not necessarily developed in conjunction with States and Tribes as are the above nine indicators. Most of these data are aggregated and reported by other Federal agencies. EPA will use these data sets to supplement State and Tribal assessments in the Report to Congress.

- C Shellfish bed conditions
- C Wetland acreage
- C Ground water pollutants: nitrate
- C Coastal water pollutants in shellfish
- C Estuarine eutrophication conditions
- C Nonpoint source sediment loadings from cropland
- C Marine debris

NOTE: The Index of Watershed Indicators project (see below) has added three indicators to the original 18; EPA will also acquire data for these three indicators from national datasets. They are:

- C Population change
- C Hydrologic modification causes by dams
- C Urban runoff potential

1.9 Index of Watershed Indicators (IWI)

IWI is an EPA initiative to make available to the public water quality information at the watershed level. The Office of Water and its many public and private partners are using their joint information on the key water indicators to characterize the conditions of the 2,111 USGS 8-digit CUs in the conterminous United States (Alaska and Hawaii will come later). The objectives of IWI include:

- C Characterize the Nation's watersheds and identify watersheds at risk
- C Serve as a baseline for dialogue among public and private partners
- C Empower citizens to learn about and protect their watersheds
- C Measure progress toward a goal of healthy, productive watersheds

To accomplish these objectives, EPA aggregated information on the key environmental indicators—including the States' 1994 waterbody-level use support data—to the CU level. EPA then created an overall characterization of relative watershed condition based on these multiple data types. After review by the States, the index of watershed health was made available in July 1997 to the public via EPA's Surf Your Watershed page on the World Wide Web. Surf Your Watershed is an electronic index to provide data, maps and text to users on a thematic as well as geographic basis. It can be found at <http://www.epa.gov/surf>.

Through IWI, EPA and its partners are learning a great deal about strengths and weaknesses of the Nation's water quality assessments. A common issue for many States is the relatively low percentage of waters assessed in a two-year period and a bias toward assessing known problem waters. One solution for these States is to incorporate probability-based monitoring to achieve more comprehensive assessments and eliminate bias. For this reason, achieving more comprehensive assessments is listed in Sections 1.10 and 1.11 as both a long-term goal and a special goal for the 1998 305(b) process.

1.10 Vision and Long-term Goals

The text boxes on the next few pages contain the vision and long-term goal statements for State 305(b) reports and the *National Water Quality Inventory Report to Congress*.

1.11 Goals for the 1998 and Future 305(b) Cycles

EPA establishes goals or themes for each 305(b) reporting cycle to promote achievement of the vision and long-term goals for the 305(b) process and to

1. THE 305(b) PROCESS

coordinate reporting efforts among the States, Territories, Interstate Commissions, and Tribes. The goals for 1998 are to:

- Ⓒ Expand use of biological indicators and reporting
- Ⓒ Improve data management and institute annual/biennial electronic reporting
- Ⓒ Achieve comprehensive assessment coverage (complete spatial coverage)
- Ⓒ Increase assessments of drinking water use support
- Ⓒ Document and improve assessment quality
- Ⓒ Increase the use of visuals in presenting information (e.g., GIS maps)
- Ⓒ Develop a process for reporting by hydrologic unit (georeferencing)

Vision for State 305(b) Reports and the *National Water Quality Inventory Reports to Congress*

(adopted by 305(b) Consistency Workgroup in 1995)

The 305(b) reports will characterize water quality and the attainment of water quality standards at various geographic scales. In doing so, the State/Territory/Interstate Commission and Tribal reports, as well as the *National Water Quality Inventory*, will

- C Comprehensively characterize the waters of the States, Tribes, Territories, and the Nation, including surface water, ground water, coastal water, and wetlands
- C Use data of known quality from multiple sources to make assessments
- C Indicate progress toward meeting water quality standards and goals
- C Describe causes of polluted waters and where and when waters need special protection
- C Support watershed and environmental policy decision making and resource allocation to address these needs
- C Describe the effects of prevention and restoration programs as well as the associated costs and benefits
- C In the long term, describe assessment trends and predict changes
- C Initiate development of a comprehensive inventory of water quality that identifies the location and causes of polluted waters and that helps States, Tribes, and Territories direct control programs and implement management decisions.

Long-term Goals for the 305(b) Process

Purpose and Uses

- C The Report to Congress continues to meet Clean Water Act (CWA) requirements and be a primary source of national information on water quality.
- C The State and national 305(b) reports meet CWA reporting requirements, which include reporting on the achievement of water quality standards and designated uses, recommendations for actions to achieve these uses, and estimates of the environmental impact, costs, and benefits of achieving these uses.
- C The assessment data that form the basis of the reports become more useful and accessible to decision makers by increased use of tools such as a modernized STORET; the EPA Waterbody System (WBS); the EPA Reach File Version 3 (RF3) and, when available, the National Hydrography Dataset (NHD); and geographic information systems (GISs).
- C The reports move toward reporting assessment data by watershed and/or CU and State; data management tools allow consolidation at both levels.
- C The reports also satisfy other needs identified by State 305(b) staff: educating citizens and elected officials, helping to focus resources on priority areas, consolidating assessments in one place, consolidating CWA-related lists of impaired waters, identifying data gaps, and reporting the results of comprehensive assessments.

Reporting Format and Content

- C Report format and content remain relatively stable with some improvements each cycle, such as:
 - increased use of GIS maps
 - more emphasis on watershed protection, ecological indicators, and biological integrity
 - increased emphasis on Regional and Tribal water quality issues
 - increased input from sources outside 305(b) such as EPA's Environmental Monitoring and Assessment Program (EMAP), the Biological Resources Division of the U.S. Geological Survey (USGS) (formerly the Department of Interior's National Biological Service), the USGS National Ambient Water Quality Assessment (NAWQA) Program, the National Oceanic and Atmospheric Administration's National Status and Trends Program, the National Wetlands Program of the U.S. Fish and Wildlife Service, and the National Water Quality Monitoring Council (formerly the Intergovernmental Task Force on Monitoring Water Quality or ITFM).
- C The full Report to Congress and/or the Summary Report become available in electronic format on the information superhighway; platforms may include the Internet or CD ROM.

(continued)

Long-term Goals (continued)

Time and Extent of Assessments

- C The reports comprehensively characterize the condition of the waters of the States, Territories, Tribes, and the Nation.
- C States make greater use of data from Federal agencies, all appropriate State agencies, local governments, and nongovernmental organizations to increase the extent of State assessments each 305(b) cycle.
- C Between 305(b) cycles, States keep their monitoring and assessment databases current to simplify report preparation and increase the usefulness of assessment data.

Assessment Quality

- C States adopt improved monitoring and assessment methods as recommended by the ITFM and reported in the 305(b) reports.
- C The reports include assessments of ground water aquifers.
- C States increase efforts to achieve reproducible assessments; i.e., once an assessment methodology has been set, the use support determination for any waterbody becomes independent of the individual assessor.
- C States identify the quality of individual assessments beginning with aquatic life use support for wadable streams and rivers. Also, States describe their assessment methods in detail and include flow charts of these methods.
- C Assessments begin early in each cycle to allow time for adequate quality assurance of State reports and WBS or State-specific databases.
- C States and EPA georeference State waterbodies to RF3 or, when available, NHD to allow mapping of impaired waters.
- C At the 305(b) Workgroup's recommendation, at least one staff position per State is devoted to managing and analyzing assessment data, with a dedicated personal computer and GIS support. The ITFM and EPA's Section 106 monitoring guidelines recommend a multi-disciplinary State assessment team.

Expand Use of Biological Indicators and Reporting

EPA and the States have long recognized the importance of developing, implementing, and supporting ambient biological assessment programs to report on the overall health of aquatic ecosystems. Biological indicators reveal whether an ecosystem is functioning properly and is self-sustaining. This information will assist States, Territories, Tribes, and Interstate Commissions in measuring progress toward achieving the CWA objective of biological integrity and determining attainment of designated aquatic life uses. EPA strongly recommends using an integrated assessment involving biological, habitat, physical/chemical, and toxicity monitoring. Sections 3 and 4 of the *Guidelines Supplement* contain improved guidance for aquatic life use support determinations and guidance for voluntary pilot biological integrity determinations.

EPA, the Intergovernmental Task Force on Monitoring Water Quality (ITFM), and the 305(b) Consistency Workgroup have concluded that increased capability and use of biological assessment tools at the State level will result in more consistent and accurate reporting of designated use attainment in the *National Water Quality Inventory Report to Congress*.

Improve Data Management and Institute Annual/Biennial Electronic Reporting

Waterbody-specific information is needed to comply with requirements under Sections 319, 314, and 303(d) of the Clean Water Act and to answer key programmatic questions. State assessment data are also receiving much wider scrutiny now than ever before due to such initiatives as IWI. To improve data consistency and usefulness, simplify preparation of State reports, and provide a management tool for States, EPA developed a computerized data system, the Waterbody System (WBS), to manage the waterbody-specific portion of the 305(b) information.

Extensive analysis of State assessment databases for IWI has identified several areas for improvement for 1998. These problems greatly hamper national analysis; solving them would help ensure that EPA properly interprets State data. These problem areas are:

- C Several States do not store sizes affected by sources or causes/stressors
- C State-specific codes are sometimes not clearly defined
- C Several States do not have electronic assessment databases at all

EPA intends to provide detailed feedback to each State about its 1996 assessment database and suggest ways to resolve such issues.

WBS users have recommended the following for the 1998 cycle:

- C Maintain stability in basic WBS operations and file structure
- C Develop a Windows version of WBS
- C Continue reach-indexing waterbodies to the EPA Reach File (RF3) or, when available, the National Hydrography Dataset (NHD), in interested States
- C Provide additional hands-on WBS and RF3/NHD training
- C Promote the establishment of a full-time position for water quality assessments and database management in each State and EPA Region; the person in this position would maintain ongoing familiarity with WBS and/or the appropriate customized State 305(b) database and ensure data quality
- C Continue to provide technical support to States that choose to use WBS. Work with other States to provide EPA with WBS-compatible data files sufficiently complete for EPA to aggregate.

EPA is implementing those recommendations for which it has authority for the 1998 cycle. The updated version of WBS will retain the same core programs and user-friendly concepts (pop-up windows, pick lists) as the previous version. EPA will provide an updated WBS and installation instructions to States soon after transmittal of final *305(b) Guidelines*. EPA contacts for the WBS are the Regional 305(b) or WBS Coordinators and the National WBS Coordinator (see page ii).

EPA expects all States to fully implement the WBS or a WBS-compatible system. EPA has provided WBS users with technical assistance since 1987 and will continue to do so. WBS and customized State assessment databases will be the vehicles by which States will transmit their annual electronic updates beginning in April 1998 (in 1997 for some States). See Section 6 for more information on these updates.

Assessment Database Managers—Text boxes with this PC logo appear in several sections of these *Guidelines*. These boxes give important information and helpful hints for ensuring accurate databases that will meet EPA's requirements.



Achieve Comprehensive Assessment Coverage (Complete Spatial Coverage)

EPA established the following goals for the 1998 cycle and beyond:

- C States progress toward characterizing surface and ground waters comprehensively (in keeping with the State's rotating basin approach if applicable) using a variety of techniques targeted to the condition of, and goals for, the waters. These techniques may include probability-based sampling designs to enable inferences about entire categories of waters (e.g., all wadable streams) from a subset of waterbodies.
- C States include information from Federal agencies and other relevant organizations in their 305(b) reports to increase the breadth or extent of assessments.

To help ensure national progress toward this goal, each State is asked to include in its 1998 305(b) report a plan for comprehensive monitoring and assessment of its waters. Section 4 describes the contents of this plan. Section 2 of the *Guidelines Supplement* contains recommendations for using a combination of targeted and probability-based monitoring to achieve more comprehensive assessments.

Increase Assessments of Drinking Water Use Support

One of the findings of the last two 305(b) reporting cycles is the relatively low percentage of waters that have been assessed for drinking water designated use nationwide. EPA strongly encourages States to focus resources on increasing the percentage of waters assessed for this use and on enhancing the accuracy and usefulness of these assessments. This goal is consistent with EPA's source water protection initiative under the 1996 Amendments to the Safe Drinking Water Act. States are encouraged to use source water assessments to delineate watershed areas (source water protection areas) for all public water systems and thereby increase the assessment of source waters for drinking water use. The States also are encouraged to use this information from the source water assessments in their 305(b) reports.

Document and Improve Assessment Quality

In the past, few States have tracked measures of assessment or data quality in their 305(b) assessments. For 1998, the *Guidelines* ask States to assign assessment quality levels to the aquatic life use support

assessment for each wadable river or stream waterbody (see Section 3.2 of the *Guidelines Supplement*).

Such measures will be useful at the State level in planning and evaluating monitoring programs. For example, a State might find that assessments in a particular basin need to have a higher level of information before spending large sums of money to implement controls there.

EPA will not report assessment description information at the national level. Rather, EPA will use the information to determine the strengths and limitations of State monitoring and assessment programs and improvements needed, eventually helping to increase comparability of assessments among States. This is especially important, for example, in ecoregion studies that cross State boundaries or in Regional comparisons.

Increase the Use of Visuals in Presenting Information

A great deal of information about use support, causes/stressors, and sources of impairment can be presented in a single map or other illustration. Several States have made effective use of color maps and photographs in recent reports. GIS technology and the data to support it, such as WBS datasets, are becoming available in more State water quality agencies each 305(b) cycle. EPA is currently providing technical support to States to georeference their waterbodies to RF3, EPA's national hydrologic database, to facilitate GIS applications.

The goal for 1998 is for each State to include maps showing, at a minimum, use support, causes, and sources. Color maps are preferred because of the wide range of information they can present. EPA is making sample maps available to State and Regional 305(b) Coordinators; contact the National 305(b) Coordinator.

Develop a Process for Reporting by Hydrologic Unit (Georeferencing)

Historically, States have tracked use support at two levels: the individual waterbody level and statewide. Modern information technology makes it possible to track assessments at other levels with relatively little additional effort. In addition to the individual waterbody or stream-segment level, the most useful levels to water quality managers are the small watershed, the large watershed (e.g., the USGS 8-digit CU), the river basin, and the ecoregion. Figure 1-2 shows four of these different levels.

1. THE 305(b) PROCESS

The goal for 1998 is to move closer to full integration of assessment information at all scales. Fully integrated assessment information would mean

- c All waterbodies are georeferenced to RF3 (i.e., assigned locational coordinates for GIS mapping and analysis).

figure not available in electronic form

Figure 1-2. Hierarchy of nested watersheds (adapted from GIS coverages for the Upper Tar-Pamlico River Basin, NC; RTI, 1994)

- C Watersheds, basins, and other hydrologic units are selected to "nest" within one another and to share common boundaries wherever possible.
- C Assessment reports and maps can be generated electronically at any hydrologic level and by ecoregion.
- C Assessment results are consistent among 305(b) reports, watershed plans, basin plans, and other State reports.

Careful data integration is key to the goal of aggregating assessments at different hydrologic units. For this reason, EPA is providing technical support to the States for georeferencing waterbodies. Some States are revising their watershed boundaries to be consistent with other agencies' boundaries. As States upgrade their information systems and make greater use of GIS, WBS, and other tools, EPA is confident that this goal will eventually be achieved nationwide.

To ensure progress toward this goal, EPA asks each State to include in its 1998 305(b) report a plan for georeferencing its waterbodies (streams, lakes, estuaries and ocean shorelines) to RF3. If a State wishes to use a hydrographic coverage other than RF3 with similar or better resolution, the plan should address how this will be achieved and how it will be linked to RF3 to enable national coverage. States that have already georeferenced their waterbodies should simply document the process and the hydrographic coverage they used. As described in Section 4, this georeferencing plan can be included in the State's plan for achieving comprehensive assessments.

1.12 Tribal 305(b) Reporting

EPA encourages Native American Tribes to develop the capability to assess and report on the quality of Tribal water resources. The development of a Water Quality Assessment Report under Section 305(b) of the Clean Water Act provides a method for Tribal decision makers to assess monitoring data in a meaningful way and use this information to guide efforts to care for Tribal water resources. The process offers an opportunity for a Tribe to call national attention to issues such as fish tissue and groundwater contamination from toxic chemicals, and provides a vehicle for recommending actions to EPA to achieve the objectives of the Clean Water Act and protect Tribal waters for cultural or ceremonial needs.

Native Americans are exempted from the Clean Water Act reporting requirement under Section 305(b) (*Federal Register*, Vol. 54, No. 68,

April 11, 1989, p. 14357). However, several Tribal entities including the Hoopa Valley Reservation in California and the Gila River Community in Arizona have prepared 305(b) reports. This reporting process has allowed these Tribes to go beyond reporting summaries of raw data and to identify the pollutants and stressors causing impairment of Tribal waters and the sources of these stressors where possible.

The *Guidelines Supplement* contains a summary of key items for first-time Tribal reports (Appendix F). Also, EPA has prepared a booklet describing the basics for Tribal 305(b) reporting and potential advantages to Tribes that choose to report through the 305(b) process--*Knowing Our Waters: Tribal Reporting under Section 305(b)* (EPA 841-B-95-003). This booklet is available through EPA Regional 305(b) Coordinators.

EPA encourages Tribes to work with appropriate Federal or State agencies to facilitate technical transfer of methods and data to enhance the Tribes' capabilities and ensure coverage of Tribal waters. Tribes are encouraged to prepare their own 305(b) reports, prepare a joint report about Tribal waters with the appropriate State water quality agency, or contribute assessment data to the State 305(b) report.